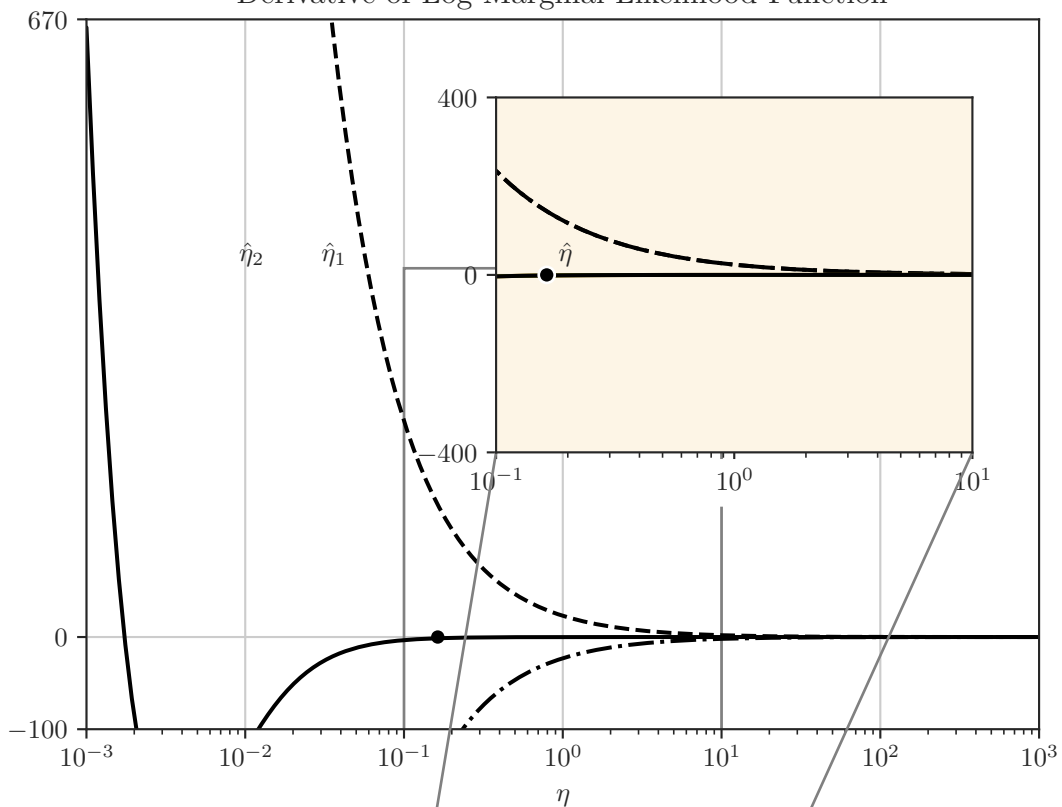


# Derivative of Log Marginal Likelihood Function

$d\ell_{\sigma^2(\eta)}/d\eta$



- Upper bound
- .- Lower bound
- Exact
- 1<sup>st</sup> order asymptote
- 2<sup>nd</sup> order asymptote
- Exact root at  $\hat{\eta} = 10^{-0.79}$
- Approximated root at  $\hat{\eta}_1 = 10^{-1.78}$
- Approximated root at  $\hat{\eta}_2 = 10^{-2.13}$